

Northern Piedmont and Mountains Orthoimagery 2014



Center for Geographic Information and Analysis

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Morganton, NC
January 29, 2015

Today

1. Introductions
2. Program/Project overview
3. Portable drive contents
4. Technical Dialog
5. VOICE Recap
6. 60-Day Client Satisfaction Period
7. Expectations for data sharing
8. Online access: NC OneMap
9. Hand-off and next steps

Introduction

Acknowledgment

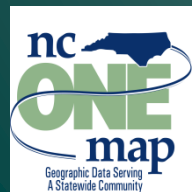
- NC 911 Board
- 118 Statewide Primary PSAPs
- Candy Strezinski
- Roundtable

Statement of Need: Ortho Business Plan

- Geographic Information Coordinating Council
- Coordinate acquisition of statewide orthoimagery at scheduled intervals
- Cap turnaround at maximum of 4 years
- Eliminate patchwork collection of county imagery sets of varying quality, resolution, and age
- Establish a sustainable and consistent, funded Program
- Make it accessible to 911 Centers and the Public

CGIA Background

- NC Center for Geographic Information and Analysis
- Lead state agency for GIS
- Services Program – solutions for state and local governments
- Coordination Program – data sharing, informed decision-making, and cost efficiencies



Statewide Ortho Program Approach

- Administer a Proactive approach to project delivery rather than engage in Reactive measures to quality issues
- Engage end-user quality review early
- Common platform for concurrent review
- Visual consistency of imagery across study areas and Program phases

Organizational Structure

NC 911 Board



Oversight and Advisory

GICC

**NC Department of the
Secretary of State**

Working group for Ortho Planning:

NC Geodetic Survey, NC DENR
NC Land Records Management
NC Floodplain Mapping Program
NC DOT, NC Agriculture
NC Commerce
Guilford and Henderson Counties
US Geological Survey
US Fish & Wildlife Service
National Oceanic and Atmospheric Administration
US Department of Agriculture



CGIA

Project Manager, Contract Administration
QBS Quality Assurance, Product
Distribution and NC OneMap
Geospatial Portal

NC DOT

Technical Advisory
Services
Photogrammetric QA
Level 2 QC

NC Geodetic Survey

Global Positioning
System
CORS Upgrade,
Camera Validation and
Horizontal Quality

**Sanborn Map
Company**

**Atlas Geographic
Data**

**Surdex
Corporation**

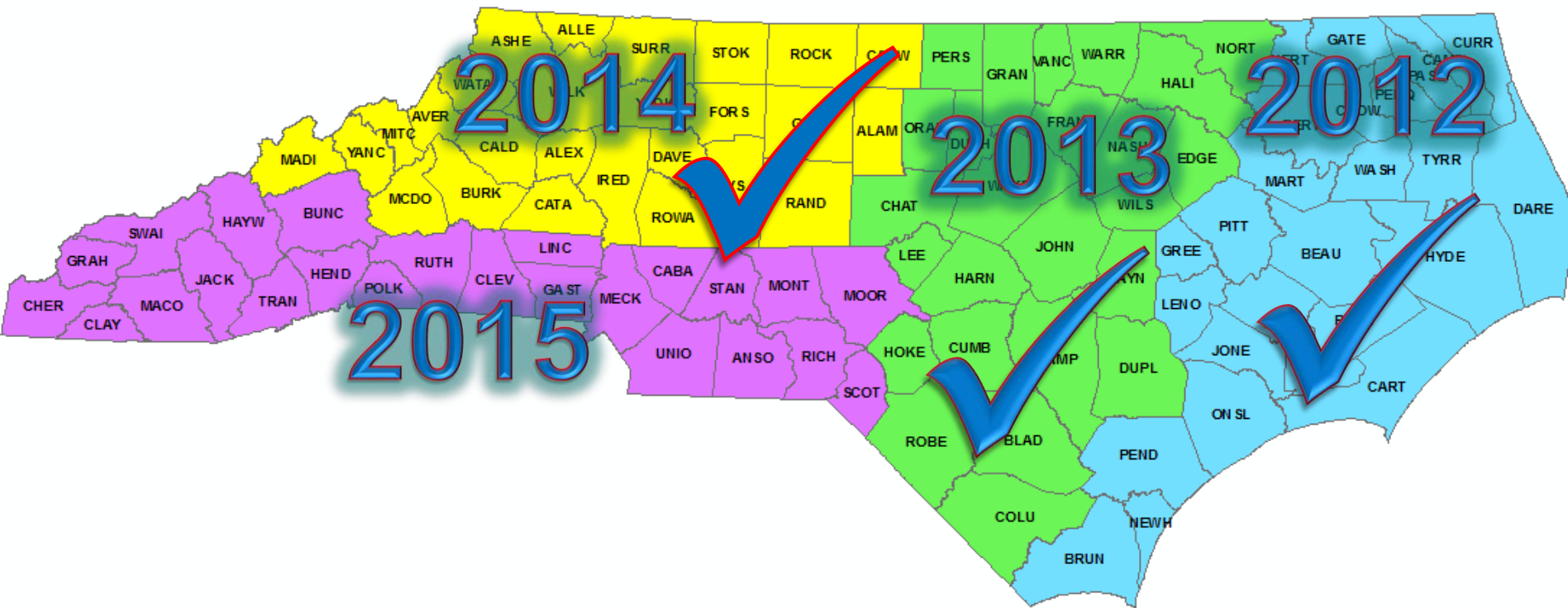
Photo Science

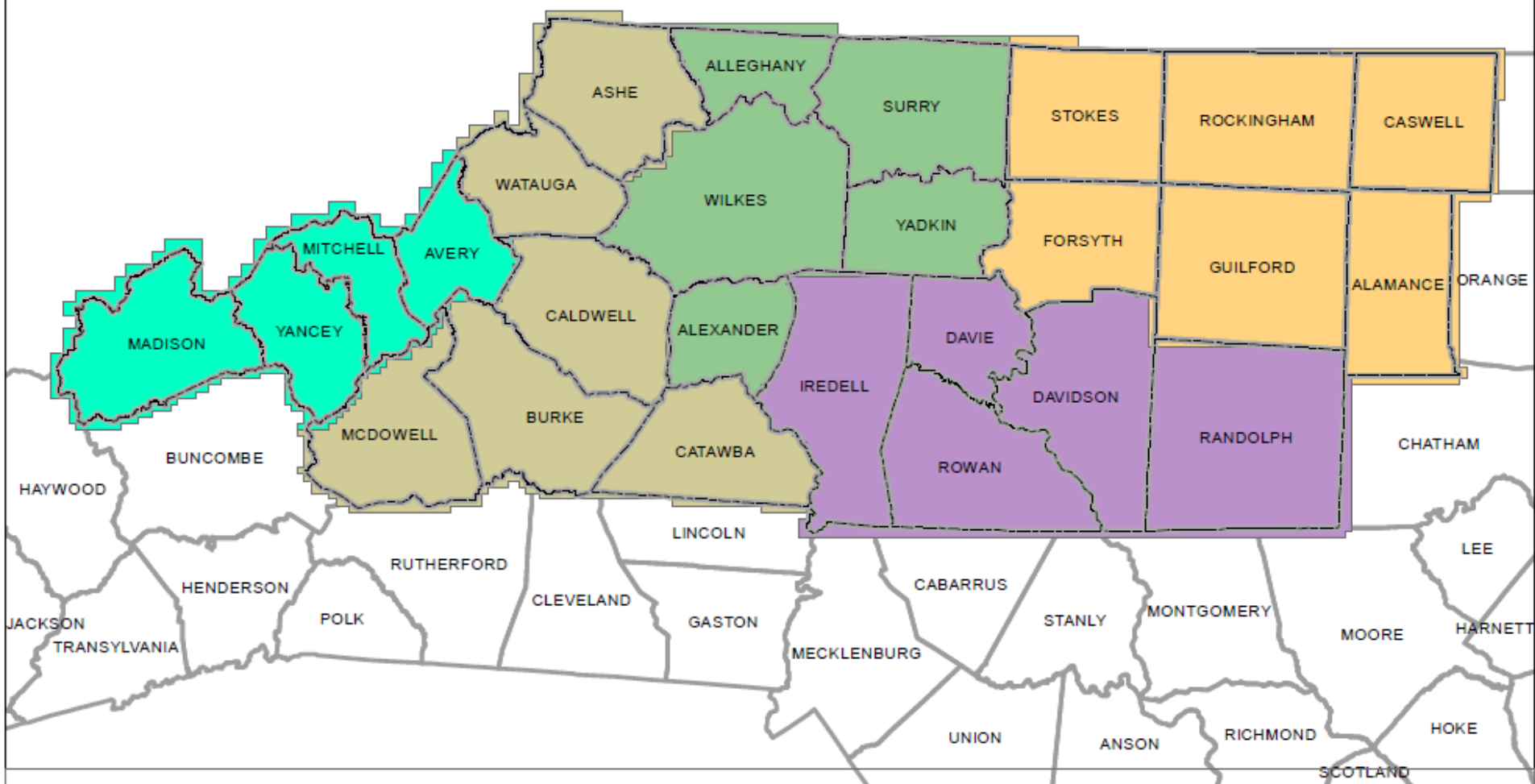
**Spatial Data
Consultants**

The Program



Statewide Orthoimagery Acquisition Cycle





**Northern Piedmont
and Mountains 2014
Proposed Contractor Study Area**

AGD	SDC
PSI	SURDEX
SANBORN	

0 10 20
Miles

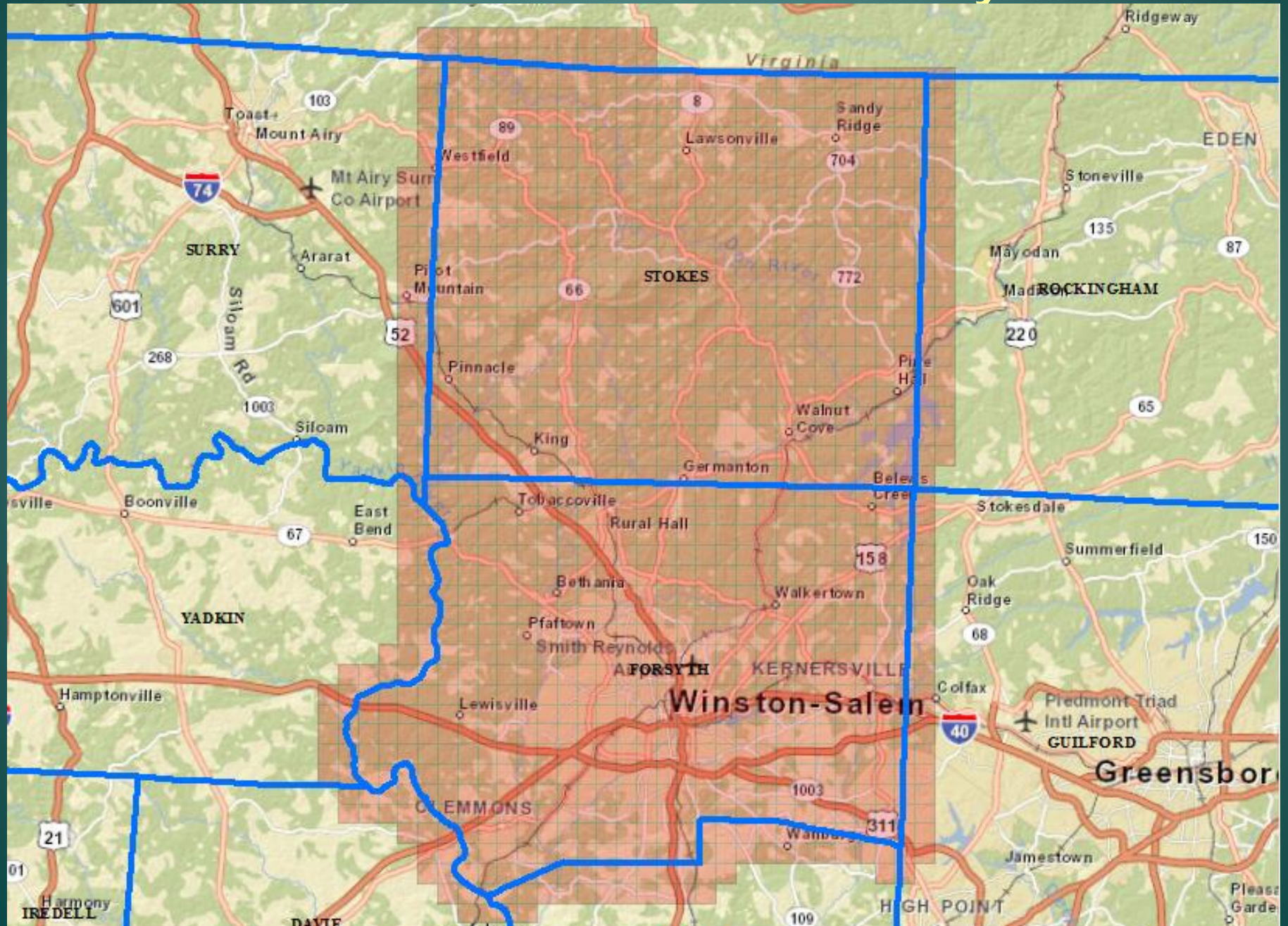
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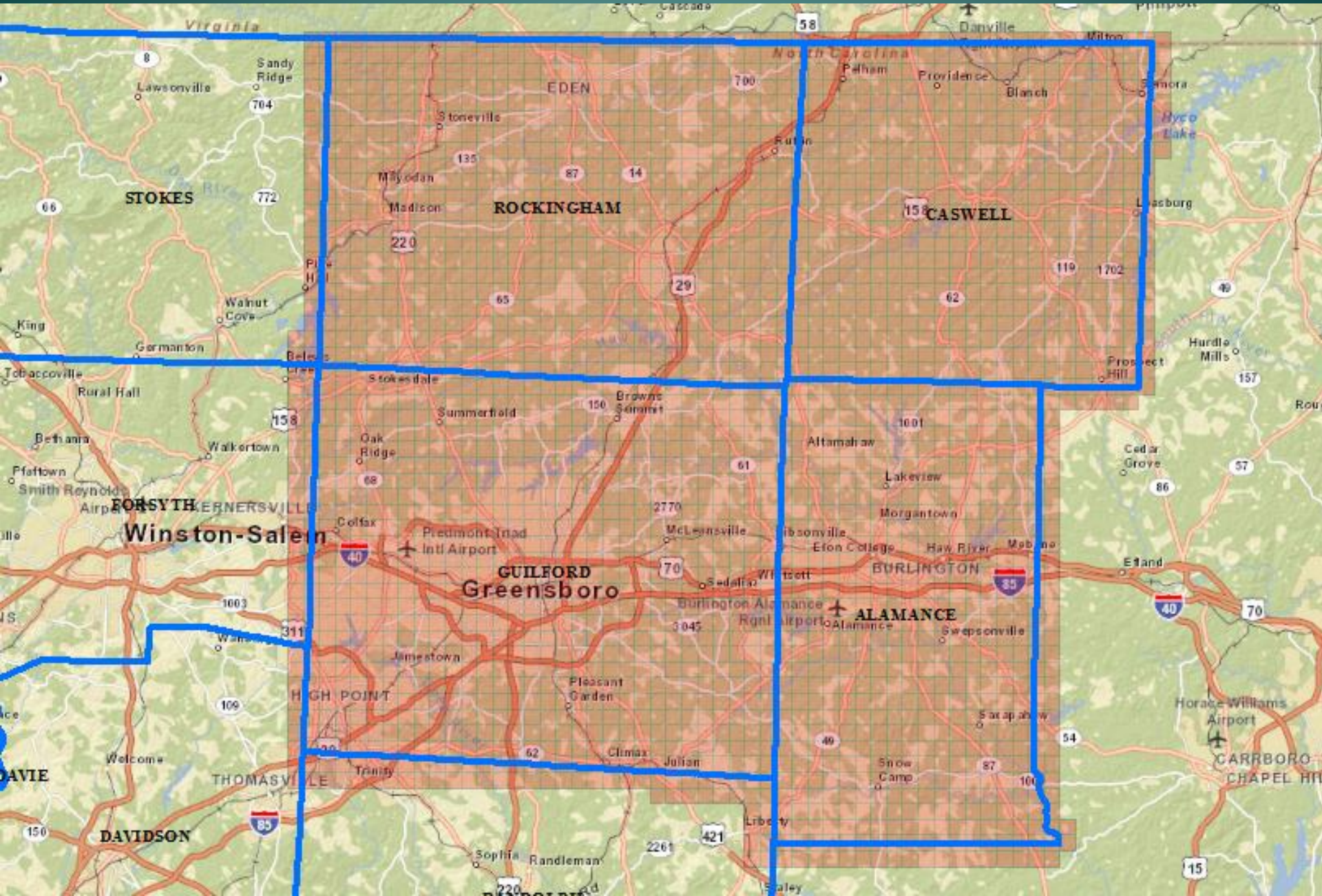
2014 Project Overview

- 26 counties in northern piedmont and mountains North Carolina
- 12,350 square miles
- 13,771 + tiles
- 6 inch pixel resolution
- NC State Plane Coordinate System, NAD83 2011
- Comply with NC Secretary of State Technical Specifications for Digital Orthophoto Base Mapping

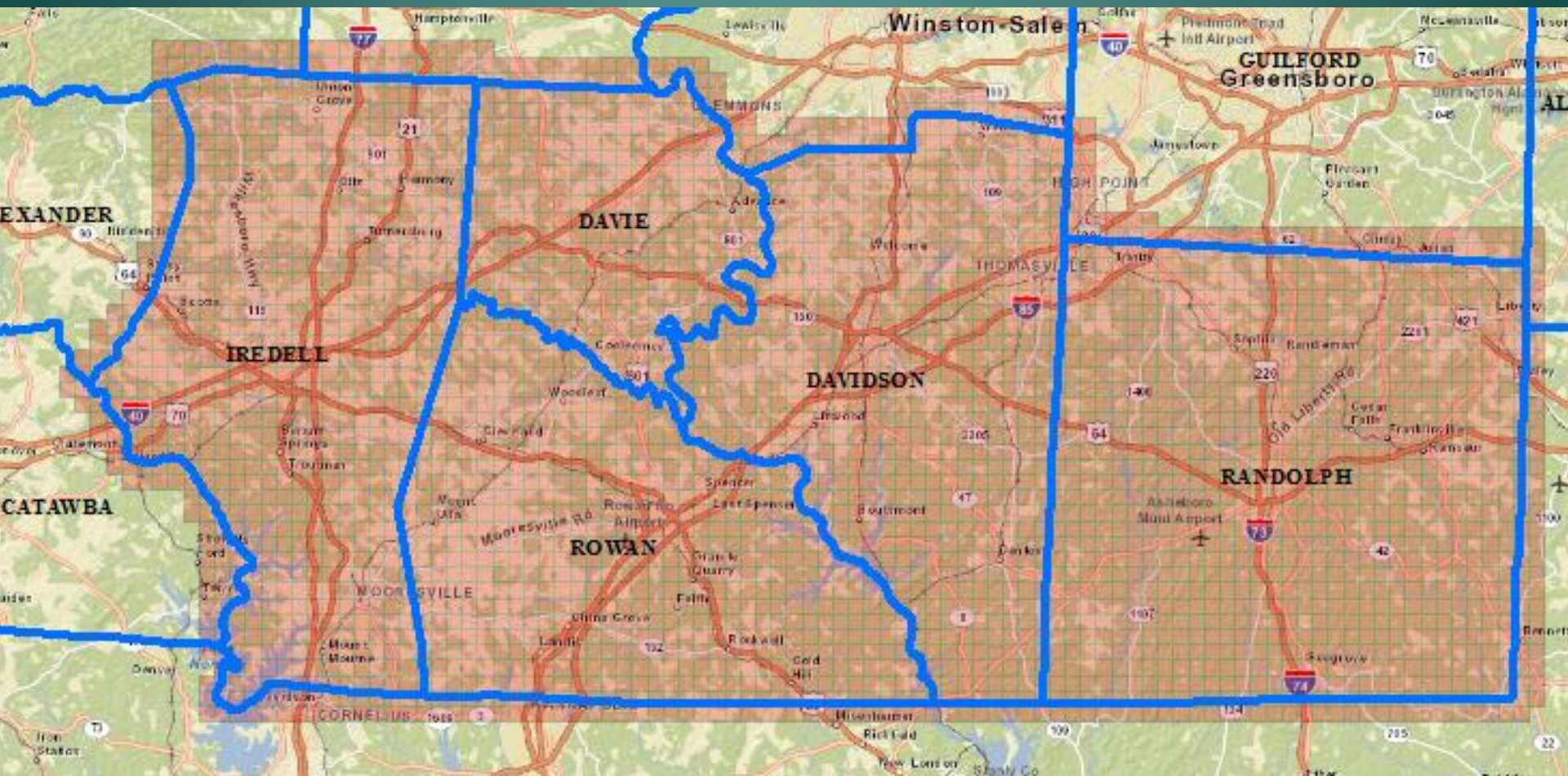
Winston-Salem – January 21



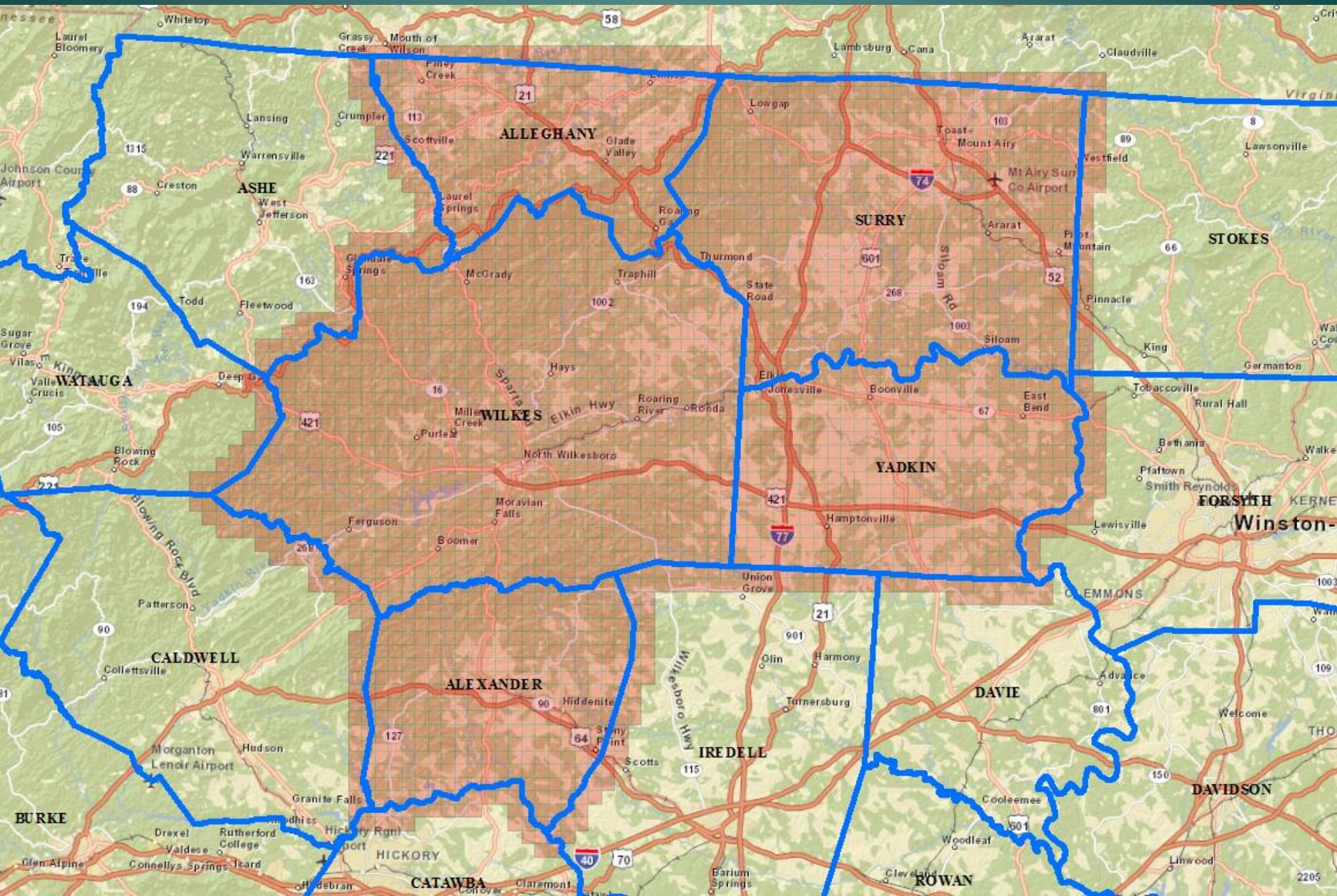
Greensboro January 22



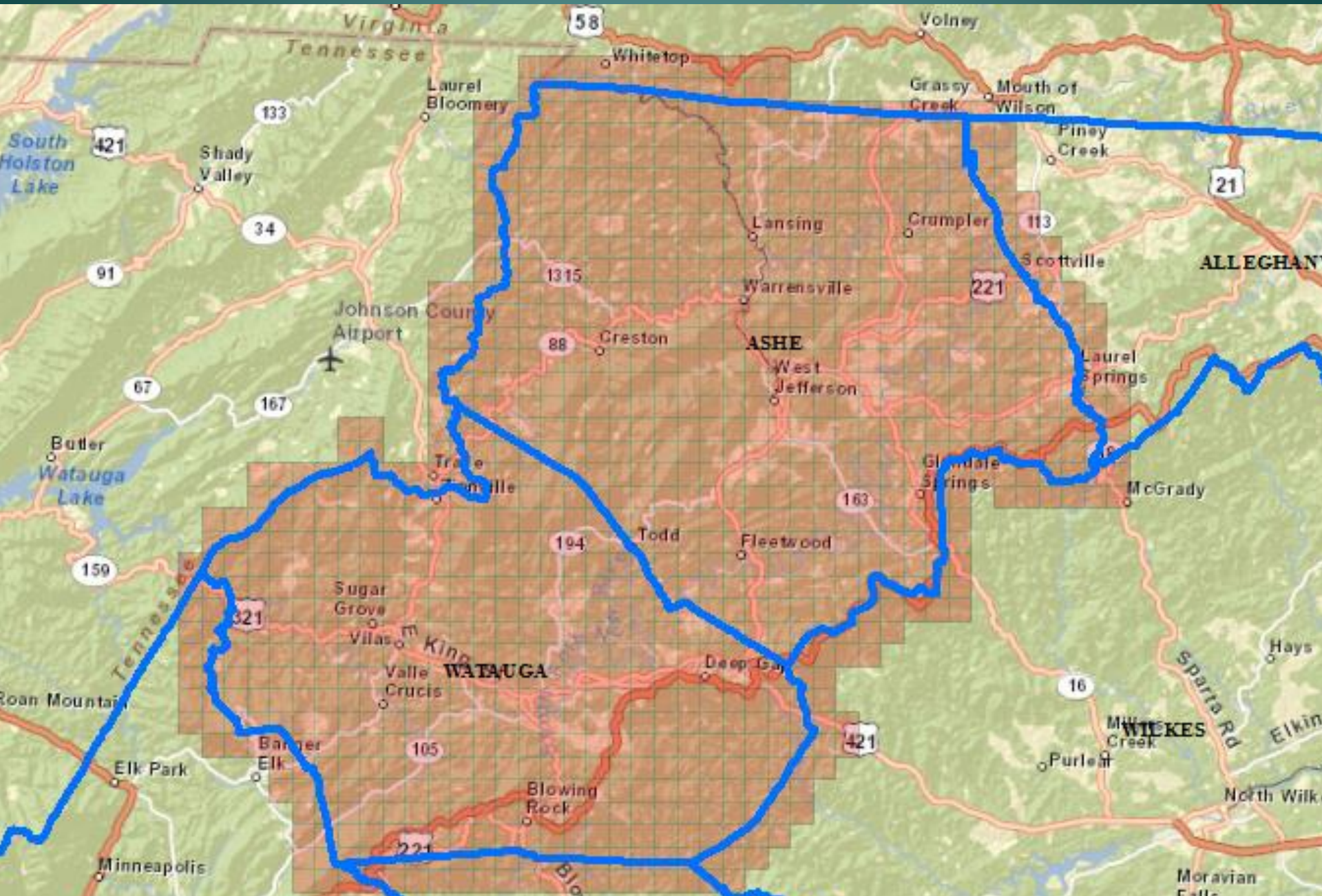
Salisbury – January 22



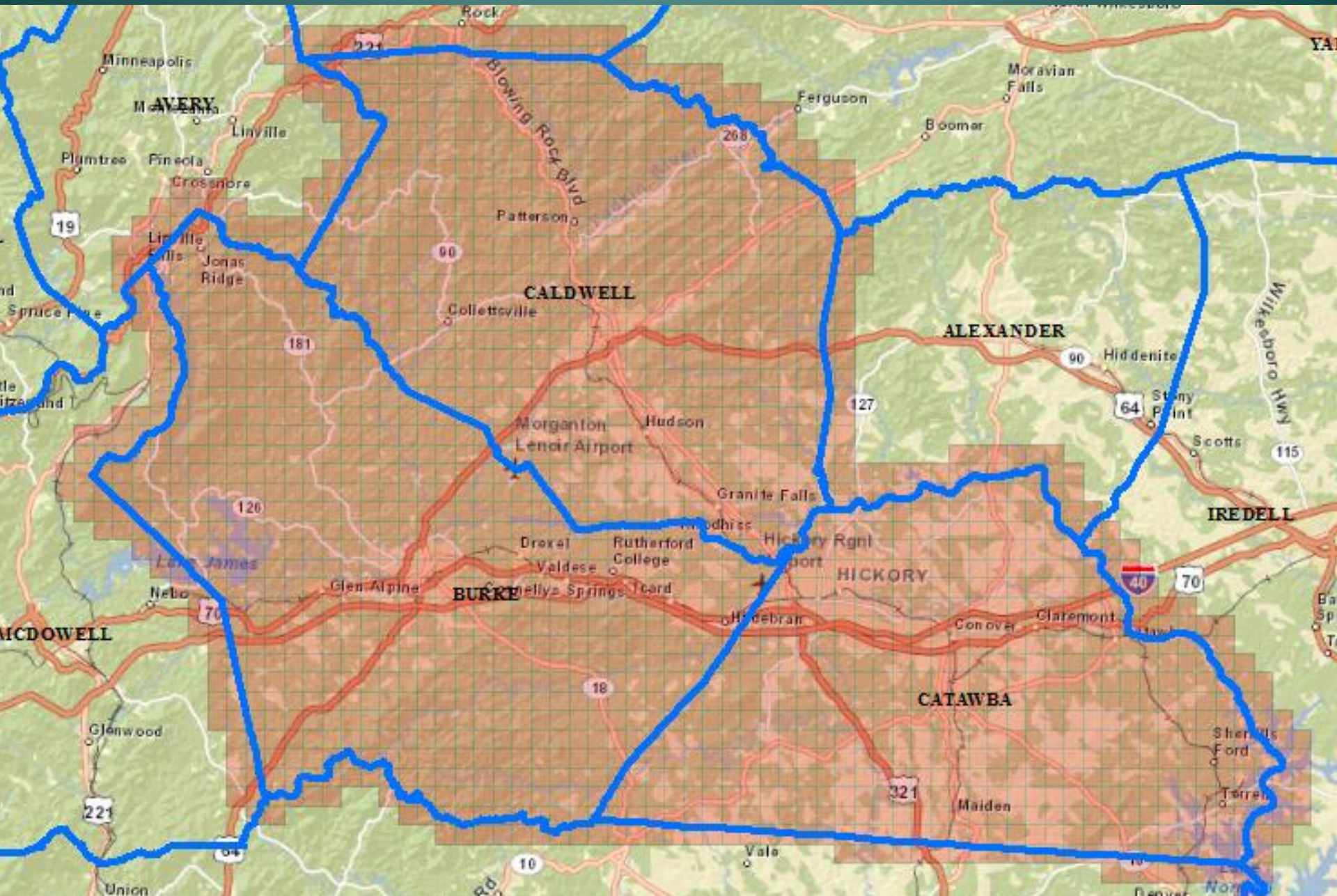
Wilkesboro – January 26



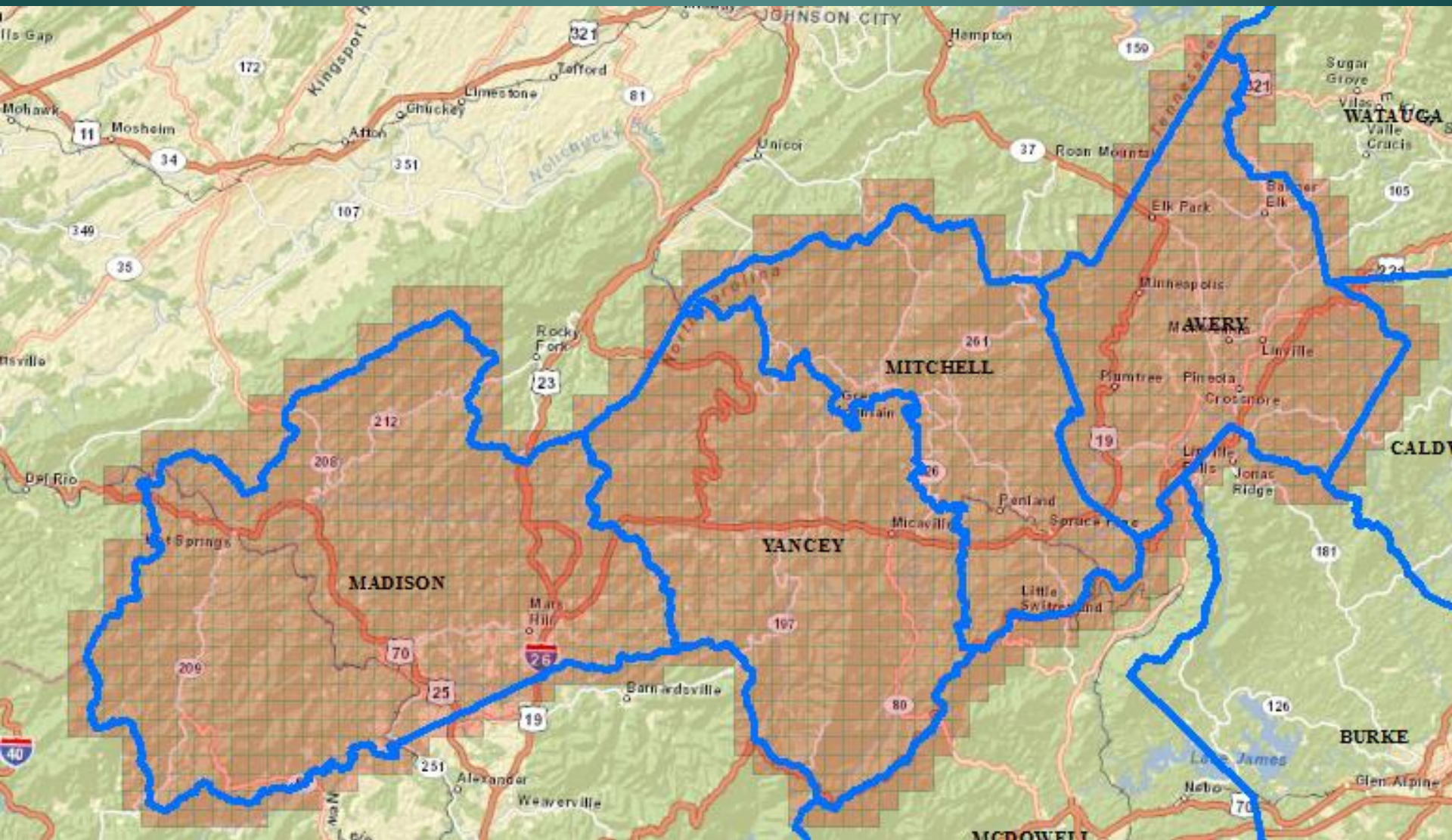
Boone – January 27



Morganton – January 29



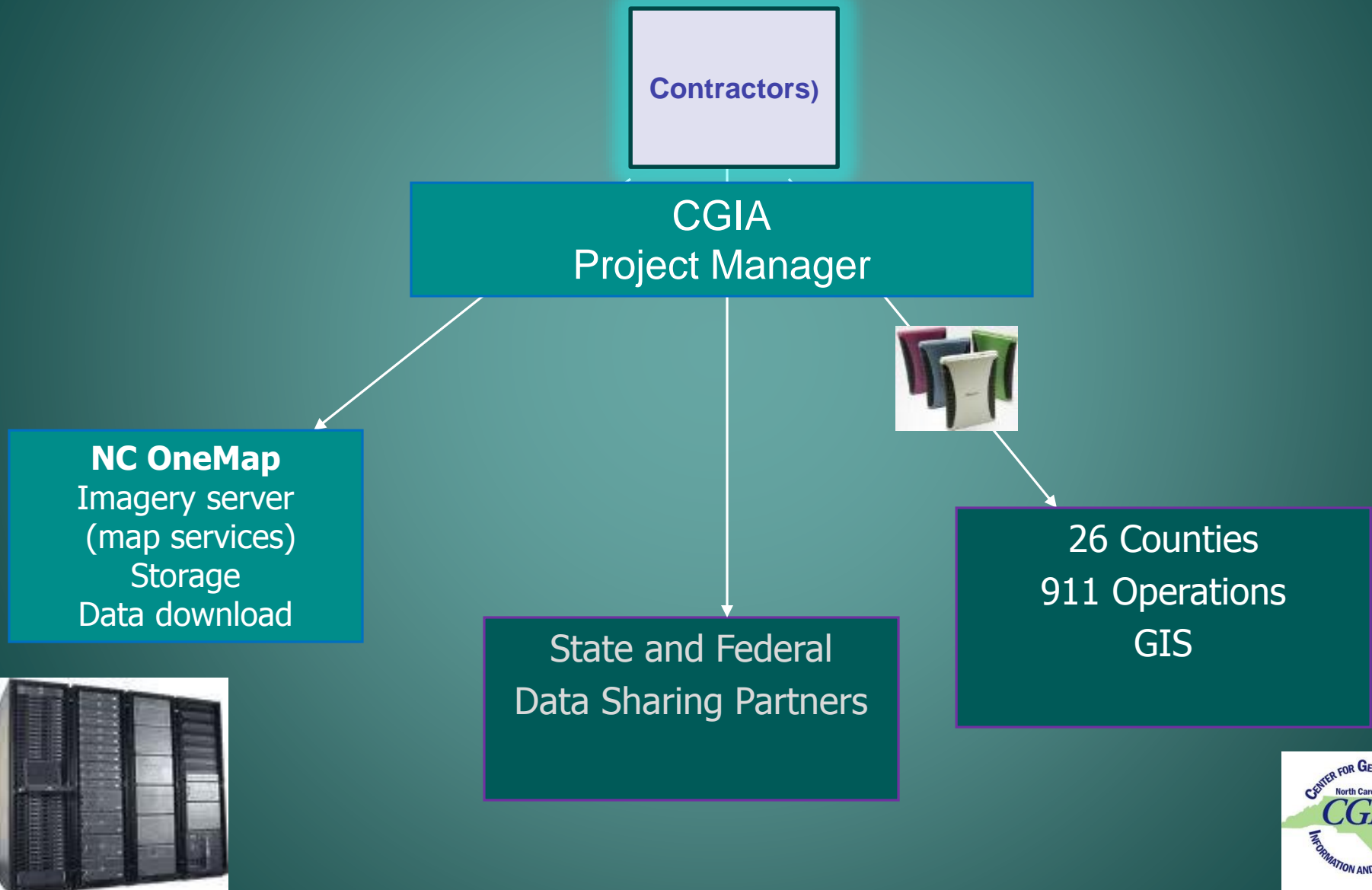
Marshall – January 28



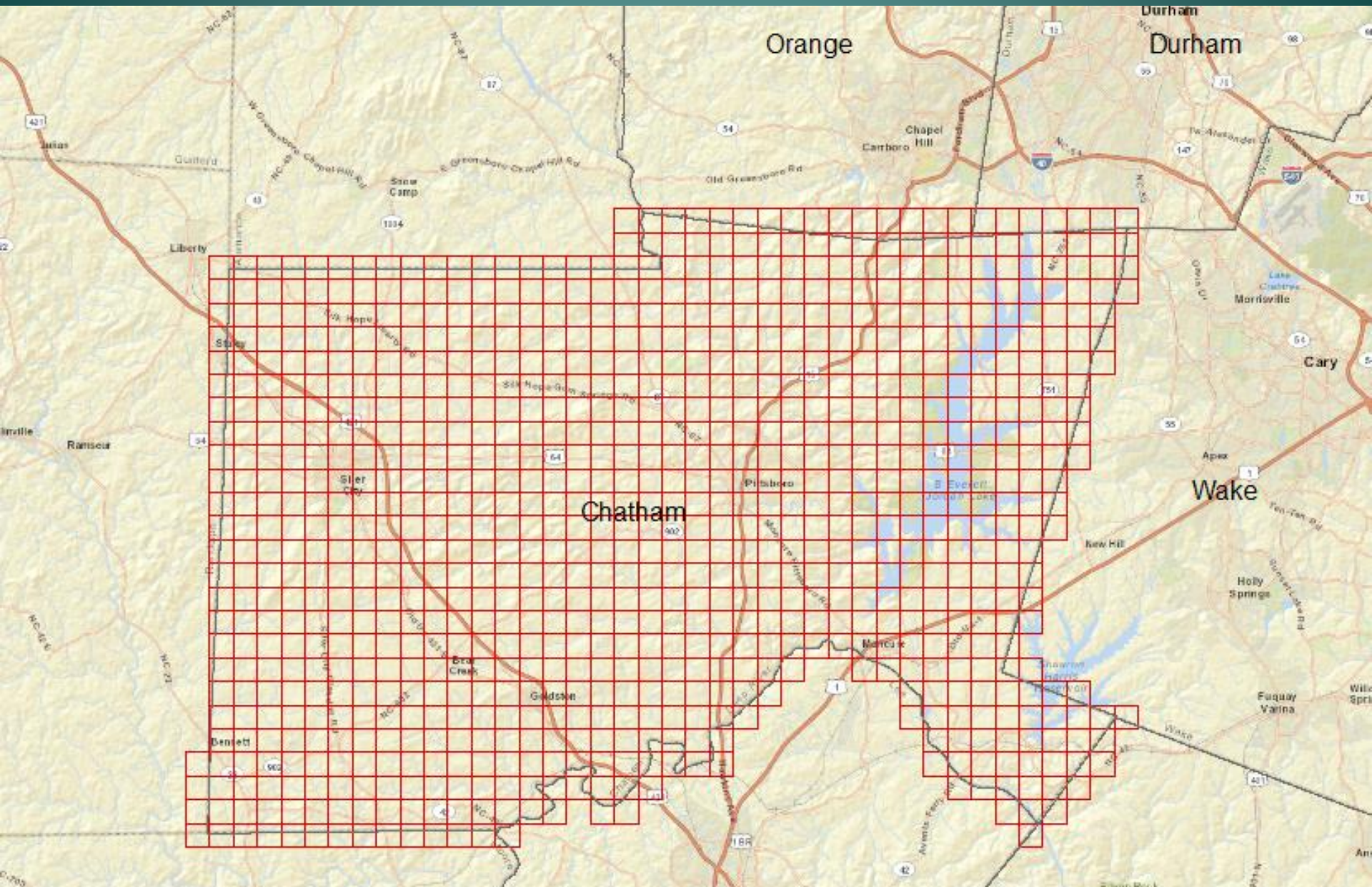
Portable Drive Contents

- README
- Full resolution TIFF imagery tiles
- Compressed MRSID imagery tiles
- Compressed MRSID for all adjacent (neighbor) counties (20:1 compression)
- County mosaics for county and adjacent (neighbor) counties (50:1 compression)
- Metadata
- Geospatial reference data (including state/county index and exposure footprints – seamline polygons)
- Elevation modifications
- Compliance and QC documentation

Distributing Imagery Products



Data – County Index



Projections and GIS

- NC State Plane Coordinate System, NAD83 (2011 epoch) feet
- ESRI/NGS projection supported format
- GeoTIFF headers and world files

Mosaics

- Specifications
 - All tiles combined (MrSID) 50:1
 - County
 - Adjacent counties
- Discussion
 - 2012 feedback
 - Mobile apps
 - Efficiency
 - Filesize vs. resolution
 - Requesting exceptions

NC Specifications

“NC Technical Specifications for Digital Orthophoto Base Mapping” from Land Records Management Program in the Secretary of State’s Office (2014*):

- Program Specifications Driver

*Adopted December 11, 2014

Tile Naming

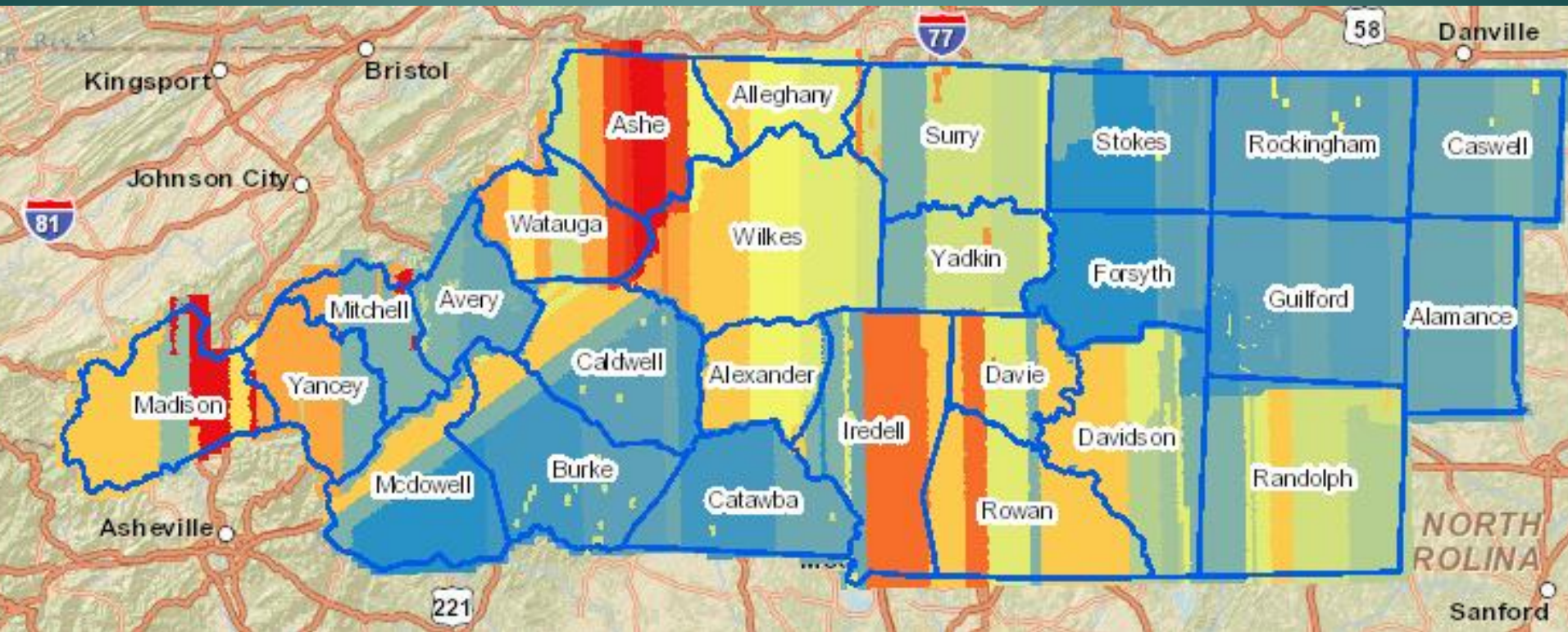
OC6i0_37_000_12345678_20120215_0305R0

- OC -2 digit product code: O= orthoimagery, C = color.
- **6i0** – 3 digit pixel size: Use the unit indicator code (i = Inch, f = Foot, m = Meter, c = Centimeter) as the decimal point. 6 Inch = 6i0, 1.5 feet = 1f5, 1.5 meter = 1m5, 15 centimeters = 15c.
- **37** – 2 digit NC ANSI (FIPS) Code
- **000** – 3 digit alphanumeric custodian code. For county maintained data this would be county ANSI (FIPS) code, 000 for statewide
- **20765400** – Map Index Number (IMAGENAME in Tile Index).
- **20120215_0305** - 13 digit code where the earliest and latest date of acquisition per county is included in the filename where the most recent date is appended to the earliest date (8 Digit start date YYYYMMDD_4 Digit finish month and date MMDD Revision Number). In this example, February 15 is date of first acquisition and March 5 is the latest

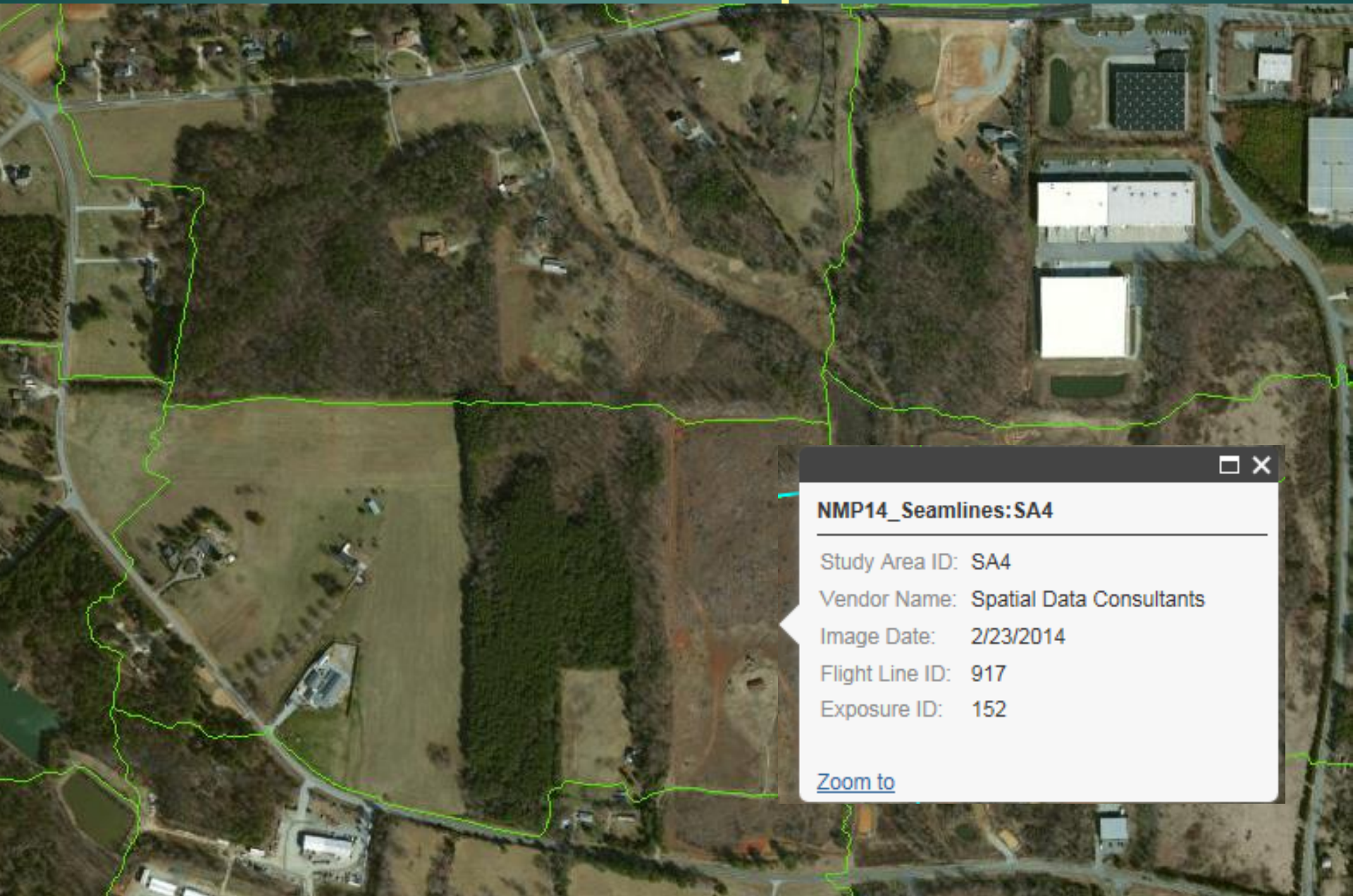
Documentation



- **Compliance**
 - Attachment C: Flight and Control Plan
 - Attachment C-1: Control Surveys Report
 - Attachment D: Imagery Acquisition Compliance Report
 - Attachment E: Airborne GPS-IMU Post Processing & AT Report
- **Quality Review Outcome (Product Review Summary)**
 - Local Government Participation
 - Results

Documentation – Acquisition Details



Documentation – Acquisition Details





NMP14_Seamlines:SA4

Study Area ID: SA4

Vendor Name: Spatial Data Consultants

Image Date: 2/23/2014

Flight Line ID: 917

Exposure ID: 152

[Zoom to](#)

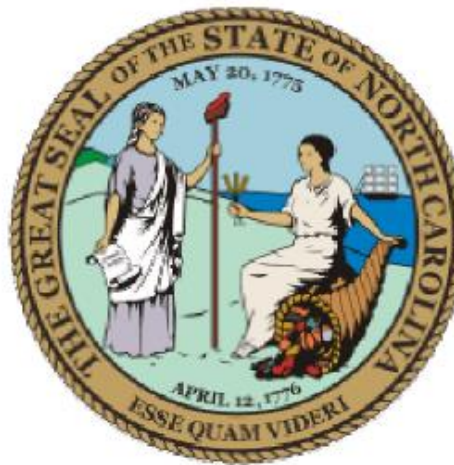
Documentation – Acquisition Details

North Carolina Coastal Orthoimagery 2012

Attachment D: Imagery Acquisition Compliance Report

CO12 SA4 AT_BLOCK-01

April 24, 2012



Prepared By:

Spatial Data Consultants, Inc.

1008 Hutton Lane, Suite 109

High Point, NC 27262

Phone: (888) 772-8425 Fax: (336) 841-1248

www.spatialdc.com

Quality Review Evolvment

- Statewide 2010
 - 911 Board – Post delivery QC
 - 90-Day
 - Data shuffling, Updates, DVDs, Hard Drives, Communication, etc.
 - Vision – Centralization, real-time imagery
- Coastal 2012
 - 911 Board – Early concurrent review
 - Challenge – Risk, Cost, Benefit
 - VOICE

Workflow – Quality Control

Contractor
QBS
Pre-
Planning
Acquisition
Landcover
Level 1

Client
Review
(Levels 2-4)

NCGS
Horizontal

Image
Correction

Image
Delivery

60-Day
Client
Satisfaction

Five-Phased Approach



•Level 2
(30%)
NCDOT

•Level 3
(5%)
CGIA

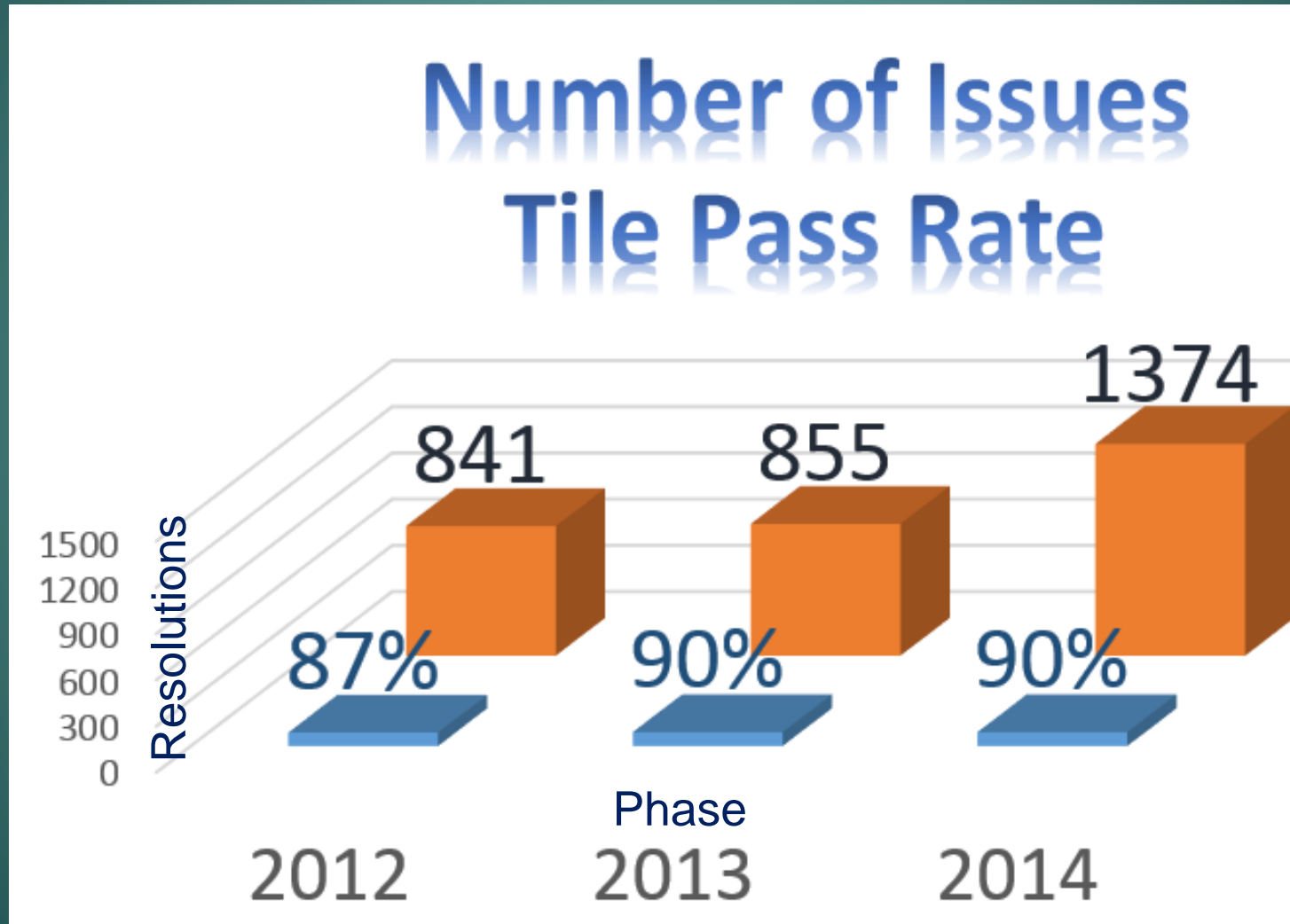
•Level 4
(25%)
(30 day)
Counties

VOICE Recap

- ✓ User Accounts
 - ✓ Central
 - ✓ Basemap
 - ✓ Relevant data
 - ✓ Pick tiles – Strategic
 - ✓ Speed
 - ✓ Tools
 - ✓ Documentation
- Help, Reference
- Output – What became of a CALL?



Northern Piedmont 2014 VOICE and Historical



VOICE Summary Demo



Expectations for Project

Areas of great importance

- Transportation
- Major bridges
- Urban areas
- No seam lines cutting buildings or large structures
- Areas of state importance
- Color and contrast well balanced at seam edges between contractors

Areas of least importance

- Highly vegetated areas
- Water bodies (color and seam lines)
- Utility lines above the ground

Documentation – Product Review Summary

State of North Carolina Office of Information Technology Services Center for Geographic Information and Analysis Northern Piedmont and Mountains Orthoimagery 2014 Product Review Summary Issues reported by CGIA, NCDOT, and County PSAP and GIS

County	Guilford
Primary PSAP:	Guilford Metro
Name:	Wesley Reid
Phone:	336-373-2122
Email:	Wesley.Reid@greensboro-nc.gov
Primary PSAP:	High Point Communications
Name:	Steve Lingerfelt
Phone:	336-883-3286
Email:	steve.lingerfelt@highpointnc.gov
CGIA Contact:	Darrin Smith (919-754-6589 darrin.smith@nc.gov)

Documentation – Product Review Summary

Issue: Elevation Anomaly
Issue Description: Warped Bridge

Sub Issue: Twisted or sunken bridges



Filename: New Hanover_20311701_818

XY: 2,314,873 179,863

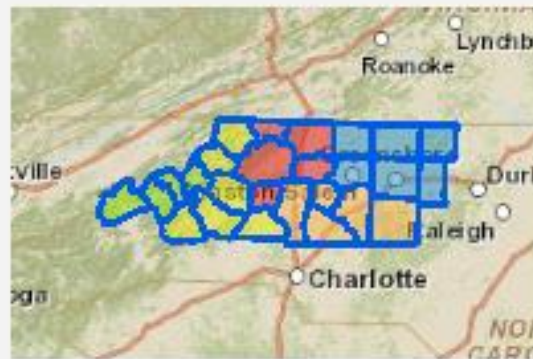
1:564

Date: 20121005

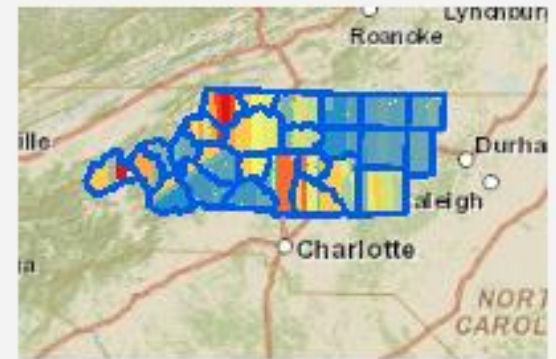
Documentation – Web Enabled Content



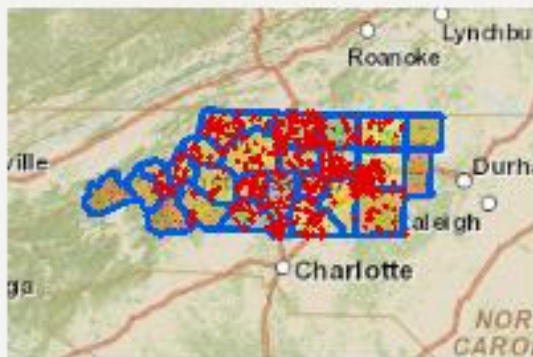
Map 1 Statewide Acquisition...



Map 2 Base Map



Map 3 Acquisition Summary

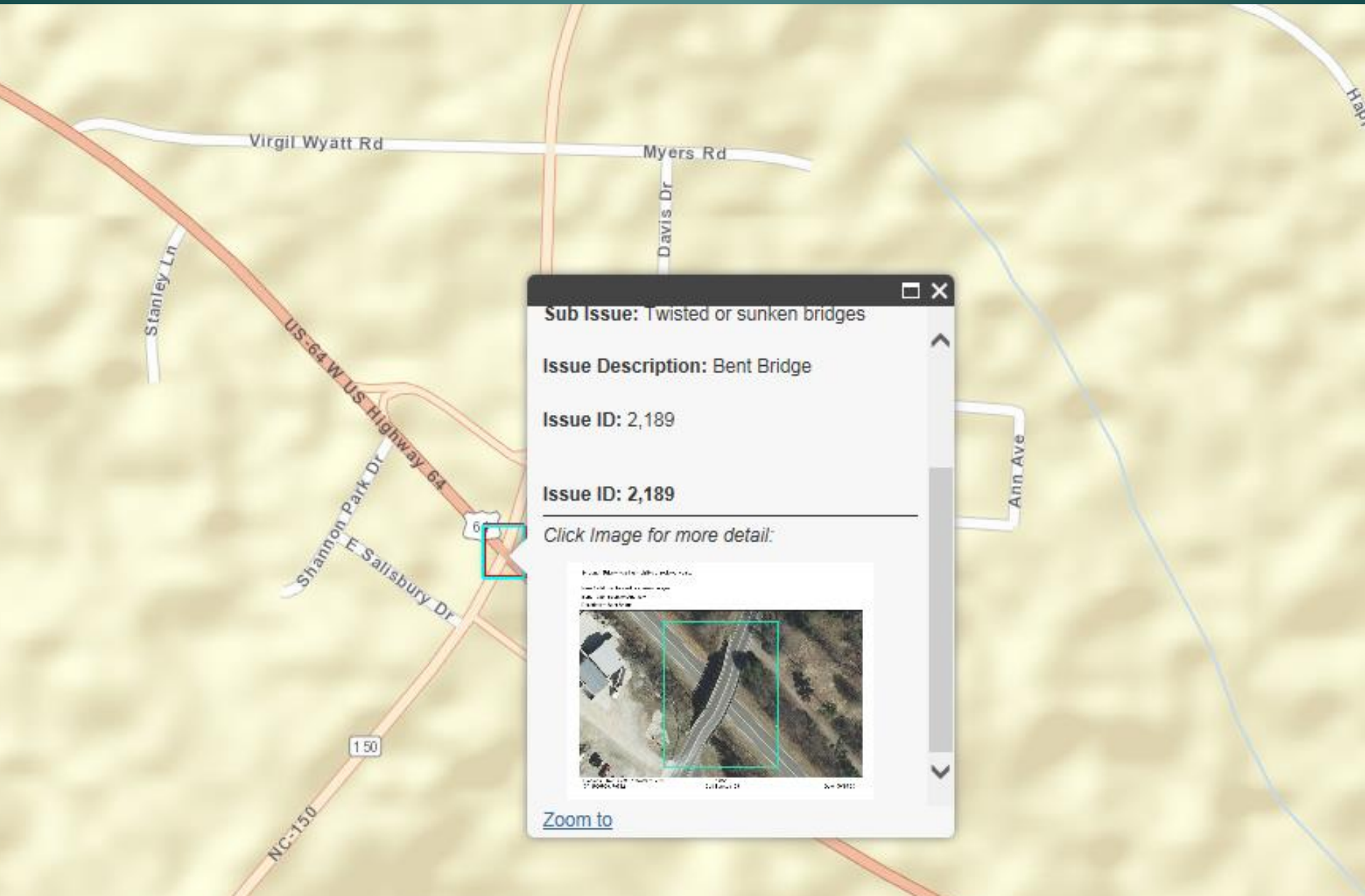


Map 4 Quality Review Sched...



Map 5 Final Delivery Sites

Documentation – Product Review Summary



What's Next (60-Day Client Satisfaction)

- Timing – 60 Days from today
- QC Period vs. Warranty Period
 - Physical review of drive contents
 - Satisfaction
 - Delivery expectations

What if you find a flaw?

- What is a flaw that should be fixed?
 - Corrupt or missing files
 - Misplaced tiles (spatially)
 - Significant quality issues
 - Regional scope in nature
 - Significant impact to man-made structures (excluding tree lean)
- Contact CGIA
 - Email
 - VOICE
- 60-day period before final repairs

Share the Data

- Expected sharing:
 - PSAPs within your county
 - GIS operations in municipalities
- NC OneMap for online access (www.nconemap.gov)
 - Download
 - Imagery services

NC OneMap Geospatial Portal



GeoSpatial Portal

[Help](#) [About](#) [NC OneMap](#)

[HOME](#)

[SEARCH](#)

[BROWSE](#)

[DOWNLOAD IMAGERY](#)

[MAP VIEWER](#)

Home

We've changed! The NC OneMap GeoSpatial Portal has added functionality that makes finding and using data easier than ever. Want to see the most recently added or updated items, view items alphabetically, and download larger areas of imagery for multiple years? Check, check, and check. [Watch the video](#) to see a demo of all the changes or visit the new [services page](#) to see a listing of map services we host.

Find Resource...

TUTORIAL VIDEOS



Introduction



What's New
In 2013



Using ESRI
Based
Services



Most Recent Items...

☐ Expand results



[NC Orthoimagery Latest Imagery Service - OGC WMS](#)



[NC Orthoimagery Latest Imagery Service - ArcGIS Server](#)



[1995-2012 NC Orthoimagery Time-Enabled Service - ArcGIS Server](#)



[2012 North Carolina Digital Orthoimagery Service - OGC WMS](#)

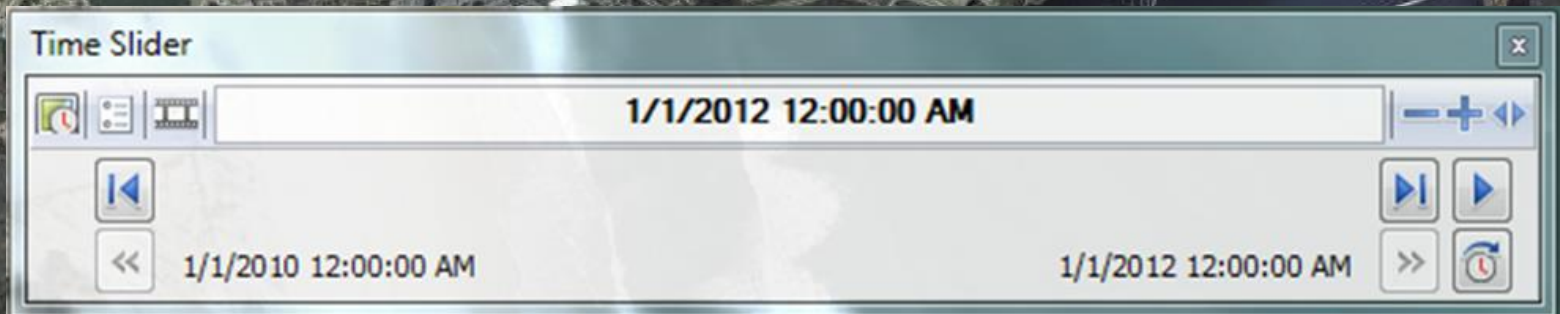


[2012 North Carolina Digital Orthoimagery Service - ArcGIS Server](#)

API: [GEORSS](#) [ATOM](#) [HTML](#) [FRAGMENT](#) [KML](#) [JSON](#) [CSV](#)

Vector and Imagery Services

- Imagery
 - Orthoimagery Standalone – Per Year
 - Orthoimagery All - 1995-2014
 - Orthoimagery Most Recent



- <http://services.nconemap.com/arcgis/rest/>

Next Steps

- CGIA continues with distribution
- CGIA will follow up to assure quality and usefulness in 911 and GIS
- 60-Day Client Satisfaction
- Southern Piedmont and Mountains 2015

911 Board Feedback

- The Board needs *your* feedback
- 4-Year Statewide Orthoimagery Program
- Southern Piedmont and Mountains 2015

Acknowledgements

- NC 911 Board
- NC Center for Geographic Information and Analysis (CGIA)
- NC Department of Transportation, Photogrammetry Unit
- NC Department of Public Safety, NC Geodetic Survey
- Land Records Management, Secretary of State
- Geographic Information Coordinating Council
 - Statewide Mapping Advisory Committee
 - Working Group for Orthophotography Planning
 - State Government GIS Users Committee
 - Local Government Committee
- Private contractors
- ESRI
- Lizardtech
- NC OITS Hosting Services
- State Chief Information Officer

Client Satisfaction



Contact

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www.nconemap.com

Questions?

